DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS FIELD STUDIES
MAP MF-1561-C
PAMPHLET ACCOMPANIES MAP

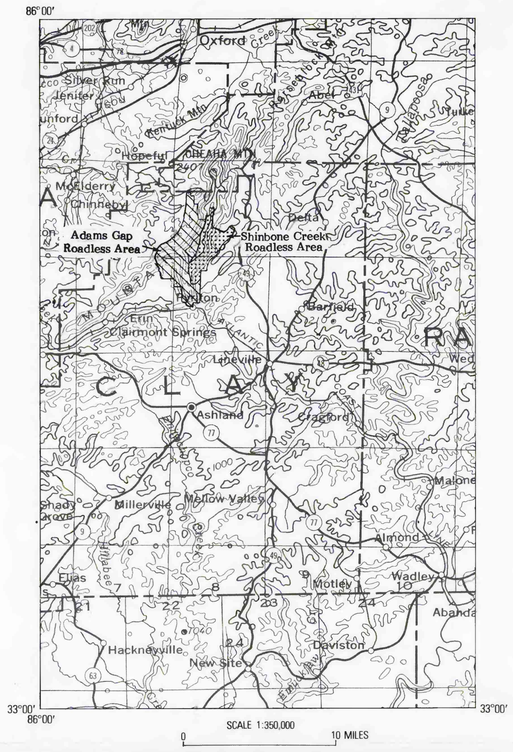

Figure 1.--Index map showing location of the Adams Gap and Shinbone Creek Roadless Areas.

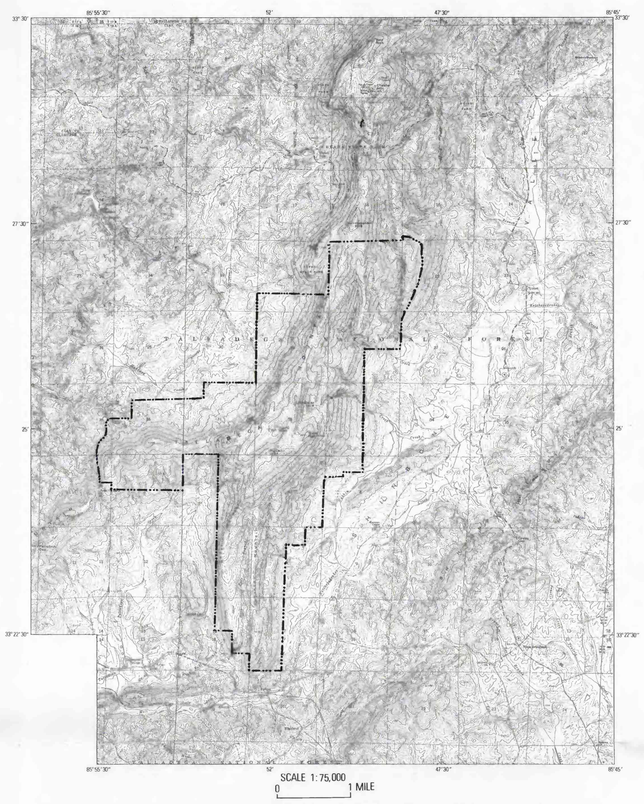

Figure 2.--Approximate boundary of the Cheaha Wilderness, established by Public Law 97-411, January 3, 1983.

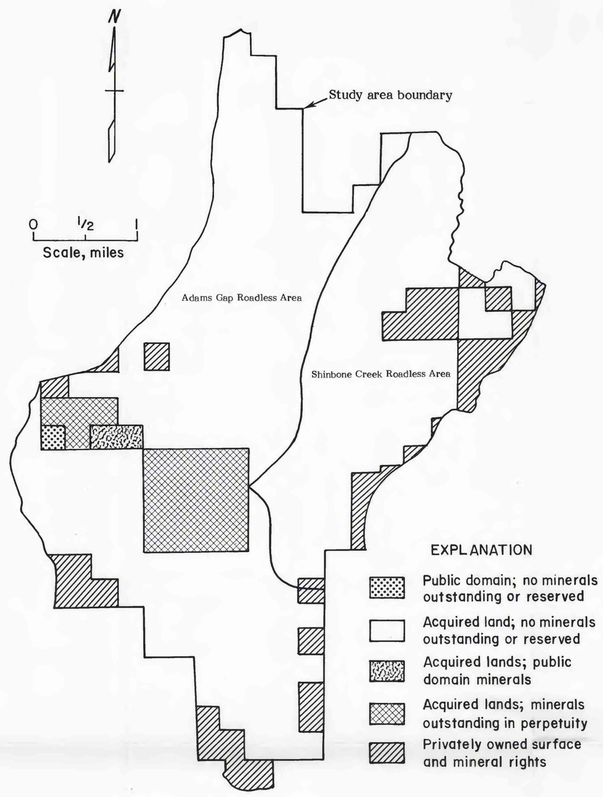

Figure 3.--Surface- and mineral-rights ownership.

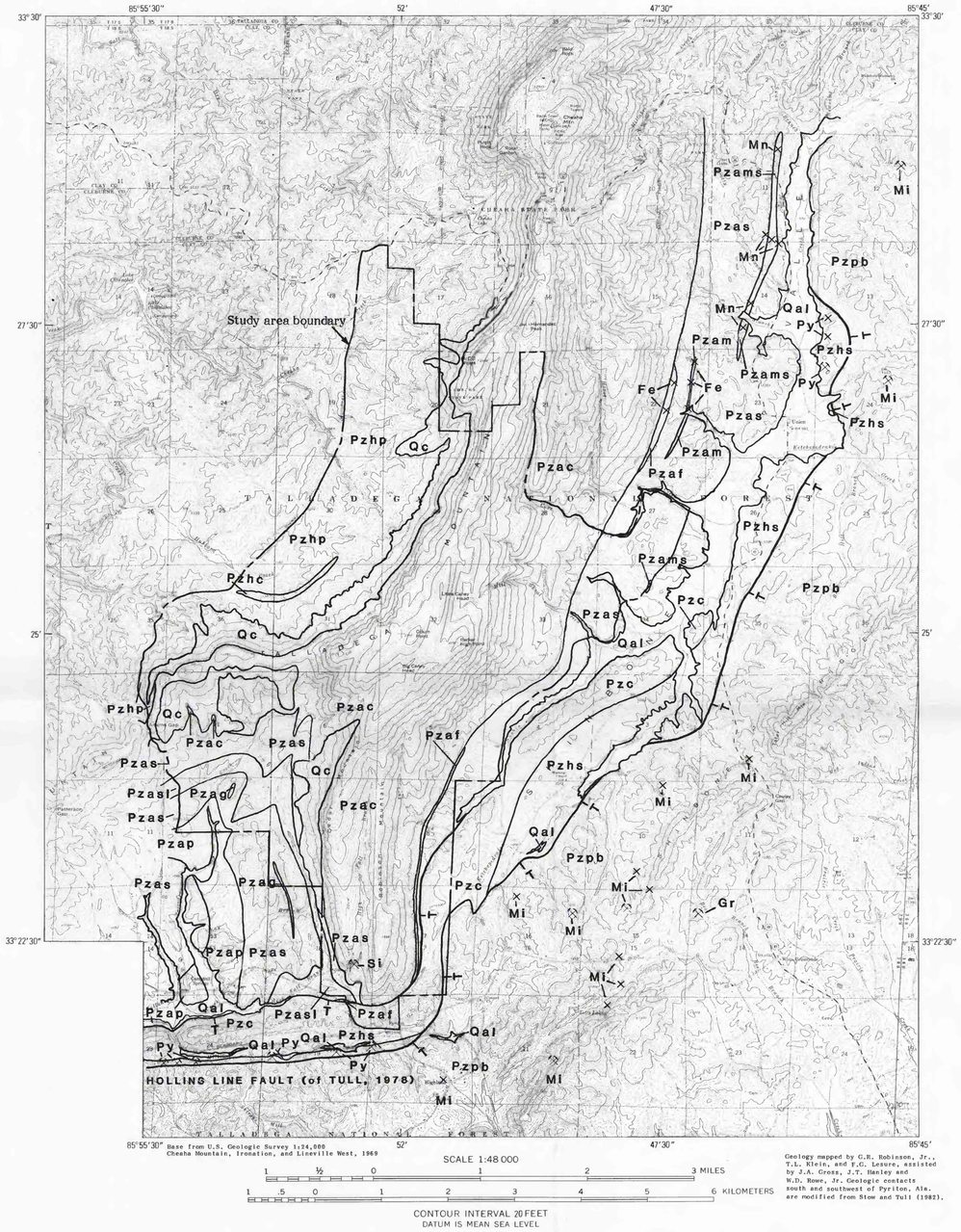

Figure 4.--Map showing geology and abandoned mine and prospect localities.

EXPLANATION

Qal | Pzac | Pzasl — Units containing construction materials

Sand and gravel resources in unconsolidated clay, silt, sand, and gravel in alluvial deposits (Qal). Crushed-rock resources in quartzite and conglomerate in the Cheaha quartzite beds (Pzac) of strata equivalent to part of the Able Gap formation of Bearce (1973). Slate resources (Pzasl) in the Able Gap formation of Bearce (1973).

Comments: Sand and gravel resources in the study area are limited in extent and suitable only for local fill. Sand and gravel, crushed rock, and slate resources of similar quality exist nearby outside of the study area.

Pzac — Unit containing refractory materials

Quartzite in the Cheaha quartzite beds (Pzac) of strata equivalent to part of the Able Gap formation of Bearce (1973). Some of the quartzite is of sufficient purity to produce refractory silica-brick.

Comments: Abundant resources of similar quality exist outside of the study area.

Pzams — Unit containing manganese

Siltstone beds (Pzams) cemented with manganese and iron oxides occurring in the Able Gap formation of Bearce (1973).

Comments: Abandoned prospects for manganese occur in this unit northeast of the study area. Insignificant resource potential in study area.

Pzaf | Pzam — Units containing limonite

Low-grade iron resources in sandstone bed (Pzaf) cemented with iron hydroxides and oxides in the Able Gap formation of Bearce (1973). Iron cement may occur only in the zone of weathered rock.

Limonite in surficial iron-rich deposits found in the zone of weathering developed over a marble bed (Pzam) in the Able Gap formation of Bearce (1973).

Comments: There is no production of iron ore from the district at the present time, and the deposits are of insufficient quality and grade to warrant development in the foreseeable future.

Pzam — Unit containing limestone

Resources in limestone bed (Pzam) (20 ft thick) in the Able Gap formation of Bearce (1973).

Comments: This limestone was once quarried for agricultural lime in an abandoned pit northeast of the study area. Surface exposures of the limestone bed have not been found in the study area.

Pzhs — Unit containing pyrite, copper, and zinc in pyrite-rich intervals in the Hillabee Chlorite Schist (Pzhs)

Comments: The pyrite-rich intervals were once prospected and mined for pyrite to provide sulfur and byproduct recovery of copper and zinc. No active production in the district. The Hillabee does not occur in the study area.

Pzpb | Pzhs — Units containing gold

Gold-bearing veins in quartzite layers in the Poe Bridge Mountain Formation (Pzpb) of Neathery (1975). Low-grade gold-bearing saprolite in surficial deposits of saprolite developed in the zone of weathering over pyrite-rich horizons in the Hillabee Chlorite Schist (Pzhs).

Comments: There is currently no production of gold from either district. No exposures of the Hillabee or quartzite layers in the Poe Bridge Mountain Formation occur within the study area and the geology of the region indicates that these units do not occur at depth under the study area.

Pzpb — Unit containing graphite

Graphitic schists of the Poe Bridge Mountain Formation (Pzpb) of Neathery (1975).

Comments: There is no active production of graphite in the area. No exposures of graphitic schist are known in the study area.

Qal | Pzc | Qc
Pzas | Pzag | Pzap
Pzhp | Pzhc — No Identified resource potential

Colluvium (Qc). Chulfinnee schist (Pzc) of Bearce (1973). phyllite and siltstone beds (Pzap), granule conglomerated beds (Pzag), and an unnamed siltstone and phyllite member (Pzas) of the Able Gap formation of Bearce (1973). Heflin phyllite (Pzhp) of Bearce (1973). Granule conglomerate bed (Pzhc) in the Heflin phyllite of Bearce (1973).

All map units are described in detail in Robinson, Klein, and Lesure (in press).

———	Contact — approximately located.
——†——†	Thrust fault. T on upper plate.
×mi	Abandoned prospect, showing commodity.
⚒py	Inactive mine, showing commodity

Commodity

Fe	Iron
Gr	Graphite
Mi	Mica
Mn	Manganese
Py	Pyrite, with associated byproduct recovery of copper and zinc
Si	Silica refractory

——— – ——— Approxmiate boundary of study area

STUDIES RELATED TO WILDERNESS

The Wilderness Act (Public Law 88-577, September 3, 1964) and related acts require the U.S. Geological Survey and the U.S. Bureau of Mines to survey certain areas on Federal lands to determine their mineral resource potential. Results must be made available to the public and be submitted to the President and the Congress. This report presents the results of a mineral resource survey of the Adams Gap (08-215) and Shinbone Creek (08-067) Roadless Areas in the Talladega National Forest, Clay County, Alabama (fig. 1). The Adams Gap and Shinbone Creek Roadless Areas were classified as further planning areas during the Second Roadless Area Review and Evaluation (RARE II) by the U.S. Forest Service, January 1979.

On January 3, 1983, the President signed a bill creating a 6,800-acre wilderness in the Talladega National Forest (Public Law 97-411). This area, named the Cheaha Wilderness, includes parts of the Adams Gap and Shinbone Creek Roadless Areas as shown in figure 2.

SUMMARY

The Adams Gap and Shinbone Creek Roadless Areas, which are in the Talladega Mountains of Clay County, Ala., are underlain by folded and faulted low-grade metamorphic rocks. Outside the study area this sequence of rocks contains a few small, abandoned, subeconomic prospects for manganese and iron. Quartzite, suitable for crushed rock and silica brick, is the only identified resource in the study area, and a quarry supplying aggregate to make silica brick was once operated within the study area. Manganese, graphite, iron, pyrite, copper, zinc, and gold have been prospected or mined nearby, but they do not occur in the study area. A possibility exists for the presence of oil and gas resources at great depths.

INTRODUCTION

The Adams Gap and Shinbone Creek Roadless Areas cover 9,480 acres, including about 8,408 acres of the Talladega National Forest in Clay County, Ala., (fig. 1). The areas, which are contiguous, were examined together and are referred to in this report as the study area.

Access to the study area is provided by several forest service routes and county roads. Two blazed hiking trails, Chinnabee and Odum, provide access to the interior. Unmarked foot and jeep trails provide limited interior access. The woods are generally open for easy hiking, except in a few areas of dense second growth in upland areas.

SURFACE- AND MINERAL-RIGHTS OWNERSHIP

Eighty-nine percent of the surface rights and 93 percent of the mineral rights are owned by the Federal Government (fig. 3). Eleven percent of the surface rights are privately owned and the remaining seven percent of the mineral rights are privately owned and held in perpetuity.

GEOLOGY

The study area contains low-grade, regionally metamorphosed sedimentary rocks of the Talladega Group as used by Neatherly (1973). The Talladega extends from the coastal-plain overlap in east-central Alabama to Cartersville, Ga. where it has been overthrust by rocks of the Blue Ridge Province. The Talladega forms the frontal crystalline thrust sheet of the southern Appalachians in Alabama (Thomas and others, 1980) and structurally overlies the easternmost fold and thrust belt of sedimentary rocks in the Valley and Ridge Province. The Talladega is composed of interlayered sandstones, micaceous siltstones, silty phyllites, slates, and lenses of granule conglomerate (Robinson, Klein, and Lesure, in press). These units contain thin quartz and quartz-calcite veins which appear to fill tension gashes.

Outcrops of the Hillabee Chlorite Schist and rocks of the Poe Bridge Mountain Formation of Neathery (1975) occur nearby to the south and east of the study area, but are separated from the Talladega Group within the study area by thrust faults.

GEOCHEMICAL SURVEY

The U.S. Geological Survey (USGS) made a reconnaissance geochemical survey of the Adams Gap and Shinbone Creek Roadless Areas (Robinson, Klein, Lesure, and Hanley, in press) to test for unidentified, indistinct, or unexposed mineral deposits that might be recognized by their geochemical halos or distribution patterns of trace elements. The rock, soil, and bulk stream-sediment samples collected were analyzed by semi-quantitative emission spectrographic methods for 31 elements and chemically for zinc in the USGS laboratories, Denver, Colorado (Erickson and others 1983). No unusual concentrations of metallic elements were found in the samples analyzed. No metallic deposits are reported to be in the study area, and none were found during the reconnaissance geologic mapping (Robinson, Klein, and Lesure, in press; Robinson, Klein, Lesure, and Hanley, in press).

MINERAL RESOURCE POTENTIAL

Aggregate is the only mineral resource having known potential in the rocks of the Talladega Group as used by Neathery (1973) in the study area (fig. 4). A possibility exists for natural gas or petroleum at great depth.

Construction Materials

No sand and gravel deposits of proven resource potential occur within the study area. The alluvial deposits along the small streams in the study area are limited in extent, and would be useful only as local sources of fill material rather than as deposits to support aggregate-production plants.

Quartzite from the Cheaha beds of strata equivalent to the Able Gap formation of Bearce (1973) in the study area is suitable for crushed stone, riprap, or common building stone; Metcalf (1940, p. 4) suggested that quartzite from Clay County might be a source for grinding pebbles and ballmill liners. Other suitable quartzite deposits occur elsewhere in the region, such as the Weisner Formation in eastern and northeastern Alabama.

Local areas of slate occur in an unnamed siltstone and phyllite member of the Able Gap formation in the study area. Slate has little present-day demand for use as a roofing material, and the slate deposits in the study area have low resource potential.

Refractory Materials

Quartzite from the Cheaha beds was quarried for silica refractory brick in the study area within the SE 1/4, sec. 18, T. 19 S., R. 8 E. However, impurities in much of the rock and prohibitive quarrying and crushing costs make the Cheaha quartzite in the study area unattractive for both silica-refractory or silica-sand use. Other suitable quartzite deposits occur elsewhere in the region, such as the Weisner Formation in eastern and northeastern Alabama, which has been quarried for refractory material in the past.

Manganese and Limonite

Undeveloped manganese and limonite prospects in the Talladega Group as used by Neatherly (1973) northeast of the study area occur along a trend that projects into the eastern part of the study area (fig. 4, units Pzams and Pzaf). Resources at these prospects and from the manganese- and iron-bearing units in the study area were considered uneconomical due to their limited size, low grade, high phosphorous content, and beneficiation difficulties (Gilbert and Smith, 1973, p. 25).

Mica and Graphite

Sheet, punch, and scrap mica have been mined from small tabular or lens-shaped pegmatites in the Poe Bridge Mountain Formation (fig. 4). Graphite is associated with graphitic schists in the Poe Bridge Mountain Formation. This formation occurs in a small area in the southeastern corner of the study area (fig. 4); structural relations indicate that it does not underlie the rocks in the study area.

Pyrite, Copper and Zinc

Mineralized rock occurs within the Hillabee Chlorite Schist as lenticular zones of banded or disseminated sulfides (predominantly pyrite). Sulfur was the principal product of the pyrite mining near Pyriton just south of the study area and copper and zinc were recovered as byproducts.

Gold

Gold is associated with quartzite members in the Poe Bridge Mountain Formation of Neatherly (1975). There is currently no production in the district. While saprolite developed over the pyrite-rich horizons in the Hillabee Chlorite Schist may have potential as a low-grade resource for gold, no such horizons exist in the study area.

Oil and Gas

The rocks of the Talladega Group in the study area have been thrust over younger unmetamorphosed sedimentary rocks (Bearce, 1978; Thomas and others, 1980). These younger sedimentary rocks have an unknown potential for oil and gas resources, but the low degree of metamorphism implies that both oil or natural gas could be present in rocks beneath the thrust fault. It is estimated that the thrust fault occurs at a depth greater than 7,000 ft under the study area. Because of the thrust-fault contact separating the Talladega from underlying rocks, surface structures in the Talladega cannot be used to determine subsurface structures and thus the possible hydrocarbon traps in the sequence of rocks underlying the thrust. Until detailed seismic studies and deep-drilling tests are performed, no estimate of hydrocarbon potential can be made.

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MINERAL RESOURCE POTENTIAL MAP OF THE ADAMS GAP AND SHINBONE CREEK ROADLESS AREAS, CLAY COUNTY, ALABAMA

By

G. R. Robinson, Jr., T. L. Klein, and F. G. Lesure, U.S. Geological Survey

and

D. K. Harrison, and M. K. Armstrong, U. S. Bureau of Mines

1983

INTERIOR—GEOLOGICAL SURVEY, RESTON, VA.— 1983

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